

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) An isolated nucleic acid encoding a polypeptide, wherein the nucleic acid comprises a polynucleotide sequence that is at least 95% identical to a polynucleotide sequence as shown in ~~SEQ ID NO:7 or SEQ ID NO:4~~, and wherein the polypeptide, when produced in a solanaceous plant, confers disease resistance in the plant.
2. (Canceled)
3. (Original) The nucleic acid of claim 1, wherein the polynucleotide sequence is SEQ ID NO:4.
4. (Canceled)
5. (Previously presented) The nucleic acid of claim 1, wherein the nucleic acid is isolated from *Solanum bulbocastanum*.
6. (Previously presented) The nucleic acid of claim 1, wherein the plant is from the *Solanum* species.
7. (Original) The nucleic acid of claim 6, wherein the plant is selected from the group consisting of potato, tomato and eggplant.

8. (Original) A nucleic acid of claim 1, wherein the polypeptide, when produced in a plant, confers disease resistance to an oomycete pathogen.

9. (Original) The nucleic acid of claim 8, wherein the oomycete pathogen is *Phytophthora infestans*.

10. (Currently amended) An isolated nucleic acid encoding a polypeptide, wherein the polypeptide comprises an amino acid sequence that is at least 95% identical to the amino acid sequence of SEQ ID NO:5 or ~~SEQ ID NO:8~~ and wherein the polypeptide, when produced in a plant, confers disease resistance in the plant.

11. (Canceled)

12. (Previously presented) The nucleic acid of claim 10, wherein the polypeptide is SEQ ID NO:5.

13. (Currently amended) A recombinant expression cassette comprising a promoter sequence operably linked to a nucleic acid, wherein the nucleic acid comprises a polynucleotide sequence encoding a polypeptide comprising an amino acid sequence that is at least 95% identical to ~~SEQ ID NO:8~~ or SEQ ID NO:5 and wherein the polypeptide, when produced in a solanaceous plant, confers disease resistance in the plant.

14. (Currently amended) The expression cassette of claim 13, wherein the nucleic acid comprises a polynucleotide sequence that is at least 95% identical to a polynucleotide sequence as shown in ~~SEQ ID NO:7~~ or SEQ ID NO:4.

15. (Original) The expression cassette of claim 13, wherein the polynucleotide sequence is SEQ ID NO:4.

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Original) The expression cassette of claim 13, wherein the polypeptide confers disease resistance to an oomycete pathogen.

20. (Original) The expression cassette of claim 19, wherein the oomycete pathogen is *Phytophthora infestans*.

21. (Original) The expression cassette of claim 13, wherein the promoter is a constitutive promoter.

22. (Original) The expression cassette of claim 13, wherein the promoter is a tissue specific promoter.

23. (Original) The expression cassette of claim 13, wherein the promoter sequence is SEQ ID NO:23.

24. (Original) A host cell transformed with the expression cassette of claim 13.

25. (Original) The host cell of claim 24 wherein the host cell is a plant cell from a solanaceous plant.

26. (Currently amended) A transgenic solanaceous plant comprising a recombinant expression cassette comprising a promoter sequence operably

linked to a nucleic acid encoding a RB polypeptide, wherein the nucleic acid comprises a polynucleotide sequence encoding a polypeptide comprising an amino acid sequence that is at least 95% identical to SEQ ID NO:5 or ~~SEQ ID NO:8~~, and wherein the polypeptide, when produced in the plant, confers disease resistance in the plant.

27. (Canceled)

28. (Canceled)

29. (Original) The transgenic plant of claim 26, wherein the polypeptide confers disease resistance to an oomycete pathogen.

30. (Original) The transgenic plant of claim 26, wherein the oomycete pathogen is *Phytophthora infestans*.

31. (Previously presented) The transgenic plant of claim 26, wherein the plant is from the *Solanum* species.

32. (Original) The transgenic plant of claim 31, wherein the plant is a potato plant.

33. (Canceled)

34. (Canceled)

35. (Canceled)

36. (Canceled)

37. (Canceled)

38. (Currently amended) A method of enhancing disease resistance in a solanaceous plant, the method comprising introducing a construct comprising a promoter operably linked to a nucleic acid encoding a polypeptide comprising an amino acid sequence that is at least 95% identical to SEQ ID NO:5 or ~~SEQ ID NO:8~~, and wherein the polypeptide, when produced in a plant, confers disease resistance in the plant.

39. (Currently amended) The method of claim 38, wherein the nucleic acid comprises a polynucleotide sequence that is at least 95% identical to a polynucleotide sequence as shown in ~~SEQ ID NO:7 or~~ SEQ ID NO:4.

40. (Previously presented) The method of claim 38, wherein the polynucleotide sequence is SEQ ID NO:4.

41. (Canceled)

42. (Original) The method of claim 38, wherein the promoter is SEQ ID NO:23.

43. (Original) The method of claim 38, wherein the method enhances disease resistance to an oomycete pathogen.

44. (Original) The method of claim 43, wherein the oomycete pathogen is *Phytophthora infestans*.

45. (Previously presented) The method of claim 38, the method further comprising selecting a plant with increased disease resistance.

46. (Canceled)

47. (Original) The nucleic acid of claim 1 wherein the polynucleotide is labeled.

48. (Currently amended) An isolated nucleic acid comprising a polynucleotide sequence which hybridizes under stringent conditions to ~~SEQ ID NO:7~~ SEQ ID NO:4 or the complement thereof, wherein the hybridization reaction is incubated at 42°C in a solution comprising 50% formamide, 5x SSC, and 1% SDS or at 65°C in a solution comprising 5x SSC and 1% SDS, with a wash in 0.2x SSC and 0.1% SDS at 65°C, and wherein said nucleic acid encodes a polypeptide which, when produced in a solanaceous plant, confers disease resistance in the plant.

49. (Original) The nucleic acid of claim 48, wherein the plant is selected from the group consisting of potato, tomato and eggplant.

50. (Original) A nucleic acid of claim 48, wherein the polypeptide, when expressed in a plant, confers disease resistance to an oomycete pathogen.

51. (Currently amended) An isolated nucleic acid molecule for controlling expression of genes that confer plant disease resistance in transformed plant cells, which comprises a segment of a RB gene from a plant species selected from the *Solanaceae* family, the RB gene comprising a coding sequence that is at least 95% identical to ~~SEQ ID NO:7~~ or SEQ ID NO:4, the segment comprising a polynucleotide sequence that is at least 95% identical to SEQ ID NO:23, the segment commencing at a location about 2,500 bases upstream from a transcription initiation site of the gene, and ending at a location about 250 bases downstream from the transcription initiation site.

52. (Original) The nucleic acid molecule of claim 51, wherein the plant is a potato plant.

53. (Canceled)

54. (Original) A fragment of the nucleic acid molecule of claim 51, comprising a segment commencing at about 2,500 bases upstream from the transcription initiation site and terminating about 25 bases downstream from the transcription initiation site.

55. (Canceled)

56. (Currently amended) A DNA segment for effecting expression of coding sequences operably linked to the segment, isolated from a RB gene whose coding region hybridizes under stringent conditions with a coding region defined by ~~SEQ ID NO:7~~ SEQ ID NO:4, the segment comprising a promoter, a transcription initiation site, and an element that confers disease resistance on expression of the coding sequences.

57. (Canceled)

58. (Previously presented) The DNA segment of claim 56, isolated from *S. bulbocastanum*.

59. (Previously presented) The DNA segment of claim 56, further comprising a polyadenylation signal.

60. (Previously presented) The DNA segment of claim 59, isolated from *S. bulbocastanum*.

61. (Canceled)

62. (Original) A cell transformed with the expression cassette of claim 61.

63. (Original) The transformed cell of claim 62, which is a potato plant cell.

64. (Original) A transgenic potato plant produced by regenerating the transformed plant cell of claim 63.

65. (Original) A reproductive unit of the transgenic plant of claim 64.

66. (Previously presented) The nucleic acid of claim 47 wherein the polynucleotide comprises a detectable label.

67. (Previously presented) The nucleic acid of claim 66 wherein the polynucleotide comprises a label selected from the group consisting of an isotope, a chromophore, a lumiphore, a chromogen, or a biotin.

68. (Previously presented) The nucleic acid of claim 1, wherein the polynucleotide sequence is at least 95% identical to the polynucleotide sequence of SEQ ID NO:4.

69. (Canceled)

70. (Previously presented) The nucleic acid of claim 10, wherein the polypeptide is at least 95% identical to the amino acid sequence of SEQ ID NO:5.

71. (Canceled)

72. (Previously presented) The expression cassette of claim 13, wherein the polynucleotide sequence is at least 95% identical to the polynucleotide sequence of SEQ ID NO:4.

73. (Canceled)

74. (New) The nucleic acid of claim 1, wherein the polynucleotide sequence comprises mutation C->T at position 933 of SEQ ID NO:4; mutation A->G at position 1258 of SEQ ID NO:4; and mutation T->A at position 1985 of SEQ ID NO:4.

75. (New) An isolated nucleic acid encoding a polypeptide, wherein the nucleic acid comprises a polynucleotide sequence that is at least 95% identical to a polynucleotide sequence as shown in SEQ ID NO:7, and wherein the polypeptide, when produced in a solanaceous plant, confers disease resistance in the plant.

76. (New) The expression cassette of claim 14, wherein the polynucleotide sequence comprises mutation C->T at position 933 of SEQ ID NO:4; mutation A->G at position 1258 of SEQ ID NO:4; and mutation T->A at position 1985 of SEQ ID NO:4.

77. (New) The expression cassette of claim 13, wherein the nucleic acid comprises a polynucleotide sequence that is at least 95% identical to a polynucleotide sequence as shown in SEQ ID NO:7.

78. (New) The method of claim 39, wherein the polynucleotide sequence comprises mutation C->T at position 933 of SEQ ID NO:4; mutation A->G at position 1258 of SEQ ID NO:4; and mutation T->A at position 1985 of SEQ ID NO:4.

79. (New) The method of claim 38, wherein the nucleic acid comprises a polynucleotide sequence that is at least 95% identical to a polynucleotide sequence as shown in SEQ ID NO:7.

80. (New) The nucleic acid of claim 48, wherein the polynucleotide sequence comprises mutation C->T at position 933 of SEQ ID NO:4; mutation A->G at position 1258 of SEQ ID NO:4; and mutation T->A at position 1985 of SEQ ID NO:4.

81. (New) An isolated nucleic acid comprising a polynucleotide sequence which hybridizes under stringent conditions to SEQ ID NO:7 or the complement thereof, wherein the hybridization reaction is incubated at 42°C in a solution comprising 50% formamide, 5x SSC, and 1% SDS or at 65°C in a solution comprising 5x SSC and 1% SDS, with a wash in 0.2x SSC and 0.1% SDS at 65°C, and wherein said nucleic acid encodes a polypeptide which, when produced in a solanaceous plant, confers disease resistance in the plant.

82. (New) The nucleic acid of claim 51, wherein the coding sequence comprises mutation C->T at position 933 of SEQ ID NO:4; mutation A->G at position 1258 of SEQ ID NO:4; and mutation T->A at position 1985 of SEQ ID NO:4.

83. (New) An isolated nucleic acid molecule for controlling expression of genes that confer plant disease resistance in transformed plant cells, which comprises a segment of a RB gene from a plant species selected from the *Solanaceae* family, the RB gene comprising a coding sequence that is at least 95% identical to SEQ ID NO:7, the segment comprising a polynucleotide sequence that is at least 95% identical to SEQ ID NO:23, the segment commencing at a location about 2,500 bases upstream from a transcription

initiation site of the gene, and ending at a location about 250 bases downstream from the transcription initiation site.

84. (New) The DNA segment of claim 56, wherein the coding region comprises mutation C->T at position 933 of SEQ ID NO:4; mutation A->G at position 1258 of SEQ ID NO:4; and mutation T->A at position 1985 of SEQ ID NO:4.

85. (New) A DNA segment for effecting expression of coding sequences operably linked to the segment, isolated from a RB gene whose coding region hybridizes under stringent conditions with a coding region defined by SEQ ID NO:7, the segment comprising a promoter, a transcription initiation site, and an element that confers disease resistance on expression of the coding sequences.